"Ageism: The Brain Strikes Back"
With Dilip Jeste, M.D.

Transcript of Cerebrum Podcast

Guest: Dilip V. Jeste, M.D., is senior associate dean for healthy aging and Distinguished Professor of Psychiatry and Neurosciences at University of California, San Diego. His main areas of research include schizophrenia, neuropsychiatric interventions, and successful aging. He has published 14 books, including Wiser (Sounds True, 2020), an exploration of the neurobiology and psychology of wisdom. He is past president of the American Psychiatric Association and editor-in-chief of International Psychogeriatrics. His awards include the National Institute of Mental Health MERIT Award, where he was chief of the Units on Movement Disorders and Dementias. He obtained his medical education in Pune, and psychiatry training in Mumbai, India. In the US, he completed psychiatry residency at Cornell, and neurology residency at George Washington University.

Host: Bill Glovin serves as editor of Cerebrum and as executive editor of the Dana Foundation. He was formerly senior editor of Rutgers Magazine, managing editor of New Jersey Success, editor of New Jersey Business magazine, and a staff writer at The Record newspaper in Hackensack, NJ. Glovin has won 20 writing awards from the Society of Professional Journalists of New Jersey and the Council for Advancement and Support of Education. He has a B.A. in Journalism from George Washington University.

[Intro] If you're lucky enough to reach what society calls “old age,” you’re going to find that navigating the world around you might not be so easy. For those still employed and in a position of influence, your younger colleagues will be wondering when you might step aside and let the next generation lead the way. Meanwhile, your friends and family will be watching closely to see if your physical and mental faculties are starting to decline and, last but not least, you need to be on the lookout for products that promise to help you improve your memory, your vision, your sex life, in what is now a $60 billion industry. Hi, I’m Cerebrum editor, Bill Glovin and welcome to the Cerebrum podcast where we explore matters of brain science with leaders in the neuroscience field. Our podcast is sponsored by the Dana Foundation in New York City. And you can find all our content at Dana.org.

[Clip] Dilip Jeste: I believe that grandparents are necessary from the evolutionary perspective, not only for increasing fertility of the younger generation, but also for transporting wisdom in that younger group.
Bill Glovin: Today, we welcome in Dr. Dilip V Jeste, senior associate dean for healthy aging and Distinguished Professor of Psychiatry and Neurosciences at the University of California, San Diego. Dr. Jeste, who is co-author of our *Cerebrum* cover story; "Ageism: The Brain Strikes Back," has published 14 books, including *Wiser: An exploration of the neurobiology and psychology of wisdom*. He is past president of the American Psychiatric Association, an editor in chief of international psychogeriatrics. His awards include the National Institutes of Mental Health Merit Award, where he was chief of the units on Movement Disorders and Dementia.

Bill Glovin: Welcome to our podcast, Dilip. Let's start by referencing your wonderful article. We have all heard terms like racism and sexism, but many people may not be familiar with ageism. Can you explain what that is?

Dilip Jeste: First of all, thank you Bill, for having me on your wonderful podcast. Ageism reflects the bias that people have against older people. The usual notion is that older people are disabled, they have multiple diseases, they become demented and depressed, and they are a burden on the society. The number of older people in the world has been growing considerably, and it will continue to grow for the next several decades. We should be happy about that, instead of that, many people call it "a silver tsunami," as if it's a disaster that is happening to the society. And why is it a disaster? Because they feel that older people cost a lot of money. They cost a lot in terms of healthcare and on top of that, they aren't doing anything. So they are a burden on the society, cost a lot and are of really no use for the society. That's the ageism. That is a problem.

Bill Glovin: Let's not mince words here. Your article says flat out that research does not support their perspective that equates aging with gloom and doom. What does the research tell us?

Dilip Jeste: That aging is a heterogeneous process. One rule doesn't apply to everybody. There is no question that there is some decline in physical health, as well as cognitive function with aging. However, the mental functioning, social functioning often improves with vision. There are many older people who function at a very high level and there are some abilities that actually improve with aging. Abilities such as control one's emotions, being more self-reflective, helping other people. And research in the last 25, 30 years has shown that there is something called neuroplasticity of aging. That is the brain continues to evolve and improve in order age, in people who stay active, in people who are active, physically, cognitively, and socially, there is improvement in brain structure and function in older age.

Bill Glovin: I think as an older person myself, I can't help but wonder if and when I might lose some of my cognitive function in the way of memory and focus, like where did I put my keys? And why can't I remember names like I used to. Is cognitive decline inevitable?
Dilip Jeste: To some extent, cognitive changes are inevitable in the last part of life. However, the last part varies from one person to another. So it depends partly on the lifespan and because of genes, as well as environment, people have different lifespans. So some people will die at 70, some will be fine until age 110. And in the last few years, very likely there will be cognitive decline. And there are some common age-associated changes in cognition. For example, memory for names and faces goes down, memory for very recent events goes down. Although we retain memory for older events, there is something called crystallized intelligence, which includes vocabulary, which doesn't change much for many, many decades. On the other hand, things that require fluid intelligence, again, things like learning new things, our short-term memory, they are affected. So, some changes in cognition with aging are inevitable. However, they cannot occur at different ages and we can definitely delay some of the changes if we stay active. Obviously, we don't have total control over our biology. However, we can help ourselves by staying active, physically, cognitively, and socially.

Bill Glovin: So those are the ways to fend off cognitive decline. We always hear about exercise and diet. Those are suggested—anything else that might be useful?

Dilip Jeste: Yes. About healthy lifestyle, we usually talk about physical exercise, avoiding sedentary behavior, sleeping well, having good nutrition. Those are, of course, very important. But people are not paying attention to what may be called psychosocial determinants of health. Things like resilience, optimism, social engagement, social support. Research in the last 20 years has shown that these psychosocial determinants of health have an impact on health and longevity that is equal to, or greater than that, of the traditional factor that we consider such as physical activity, smoking, taking medication and so on. So those things actually must be implemented. If we want to stay healthy for a longer time.

Bill Glovin: I'm going to take a right turn here for a minute and just simply ask you what inspired you to do this type of research?

Dilip Jeste: So, I was born and grew up in India and, like many Eastern cultures, people in India respect older people and they think that older people are wiser. I came to the states and became a geriatric psychiatrist. I found that, that does not that did you that most people in the modern Western world had. The usual notion here is that anything other than health, youth and beauty are not good for the society. And so older people fall into that group that is taught to be really no good for the rest of the society, that they cost money and they take resources away from younger people, the future generation. And I am the geriatric psychiatrist, in my experience, I felt that that was not the case. I studied for schizophrenia form many, many years, still do. And I was surprised to find that even people with schizophrenia, as they got older, they started doing better psychologically. The symptoms went down, they become more adherent to treatment, smoking and substance use went down.
Of course, this applied to people who still survive in old age. So clearly there is some survivor bias, sickest people die young and other people live. But, when you follow these people longitudinally, there is improvement. And in the beginning, people actually didn't believe that this could be happening. They said, if a person with schizophrenia improves in later life, probably you made a wrong diagnosis. There's no schizophrenia as it's kind of logical thinking. And luckily the things change when the movie "beautiful mind," came up. So some of you know this that it's a movie based on a true story of John Nash, a Nobel Laureate. When he was in his early twenties, he was diagnosed with schizophrenia. And for the next 30 years, he was treated with electric shock therapy, insulin therapy, all kinds of drugs, psychotherapy.

They not how much impact. At 50, he started getting better. At 60, he stopped all treatment. He went back to research and teaching. He published a paper for the first time of the 30 years. And he was a keynote speaker at the American psychiatric association meeting some years ago. And there are other examples also, now we can see people with serious mental illnesses. They do better psychologically in later life.

So one question, as a geriatric psychiatrist that I had was, maybe this is true only for schizophrenia. Does it apply to general population? So we did a study of somewhat randomly selected sample from age 21, 100+. We had a couple thousand people and we found that as people got older, the physical health of course declined as expected, but their mental wellbeing went exactly the opposite direction. The mental wellbeing was the worst in the twenties and thirties as a fountain of youth. The good news was that it got better as people got older. So older people were happier than the younger ones. And that showed to me that this ageism, which assumes that older people are unproductive, demented, depressed, and non-contributing to the society is actually wrong. And so that's what led me to begin thinking about; why is it that older people do better in some ways? And that's how actually I got to studying wisdom.

Bill Glovin: One of interesting questions your article asks in one aspect that attracted us to cover the topic, which you just kind of alluded to, but maybe you can elaborate further is whether someone's brain actually can improve rather than decline with age. I know you mentioned plasticity, and that is a extremely exciting development for listeners who might not know what that is. It's basically the strengthening of existing synopsis and the formation of new ones in the brain. What makes that so exciting? Tell us more about the brain and the idea that it really does improve and that wisdom and experience play a role.

Dilip Jeste: So there are a number of studies on the behavioral side that have shown that older people are not only more contented and feel less stressed up, but they also have better control of their emotions different from a teenager whose the emotions fluctuate from minute by minute. Similarly, they are more
compassionate, empathic, they're helpful to others, something that society needs for survival, personal activities, which are helpful. Similarly, they become more self-reflective and these are all components of wisdom.

So one question is then; how can anything like that get better with aging? Because when I went to medical school, I was taught that the only thing that happened to brain with age was that it shrunk. But the research shows that in humans, as well as in practically all the animal species that have been studied, in older age, if there is physical and psychosocial activity, the brain continues to evolve. As you mentioned, there is synaptogenesis neurogenesis, of course only in the sub-cortical areas, not in the cortical area. And there are other changes that have been shown to occur such as something called PASA, posterior-anterior shift of aging. That brain activity shifts more from the backside, the occipital lobe, to the front side, a prefrontal lobe. So the sensory function goes down, but functions such as emotional regulation and self-reflection, they can increase in older each.

Bill Glovin: Let me just use myself as an example to ask you a question. So this past weekend I got together with my college friends. I went to college in Washington DC, and a lot of us have the common denominator of having played basketball in college. And I have played basketball throughout my whole life, and now I'm in my sixties. And when we first started our reunions, we would play full court, five-on-five basketball full-out, then as the years went by, it became half court. Then more years went by, they were a lesser players involved. And now, this year, they were maybe out of 20 of us, six who could even play. And the way we played was pretty terrible.

And it is a little bit depressing to the group that we can't do this activity anymore. And when you multiply this activity by many other physical activities, I think there is a tendency to feel a little bit down, or I wouldn't say full-out depressed about it, but disappointed that something that inevitably people face, it's physical decline, not necessarily cognitive, but is that something that most people can just sort of learn to accept and move on from?

Dilip Jeste: There are two answers to that question? One is that there is no question about physical decline with age. Actually, it starts around age 30. However, we can delay that by being active right from early part of life. So if we stay physically, cognitively, socially active from our youth, the physical decline will be delayed. It will occur inevitably at some point, but it will occur at a later stage. So that's the one answer. The second and the more important one is, what does it matter if some physical abilities declined? I mean, we will not be able to play in NFL after a certain age, however, who cares about that? There are other things we can do that younger people could not do. We have a lot of experience. You see some of these great players who retire and then they become coaches, they become announcers, they become writers, they become mentors.
That's something we can do because although you may not be able to play basketball the way you did when you were in your twenties and thirties, you have a much better understanding of basketball now. So you will be able to coach the younger people much better because you have a broad concept of basketball is a game, the court, how different people are working with each other and how you can work on both offense and defense and so on and so forth. So, much better understanding now than what you had when you were in your twenties. And that can be very helpful to the younger generation. It is not necessary that we should feel bad about losing physical abilities, that is inevitable. But we should enjoy the fact that with more experience, we have more knowledge, which you can transmit to younger generations and make them wiser.

Bill Glovin: Thanks for the pep talk. I feel a lot better now. I was feeling kind of bad about it, but now, you know, I'm a mentor. So that's a great thing. Moving on to another thing: Women have a longer life span than men. Are their brains also more resilient in terms of anxiety, depression, and cognitive decline?

Dilip Jeste: Actually, women have been consistently shown to have higher... Some compounds of wisdom that are higher in women. For example, compassion toward others. Consistently, studies have shown that females have higher empathy and compassion toward others than men. And this has actually been shown even in animals. And so this is something I believe is not just social, but also a biological phenomenon. Most people know about the hormone oxytocin, which is associated with mother/child bonding. And the levels of oxytocin are higher in women. They increase during childbirth and breastfeeding. So it is possible that oxytocin can improve compassion. So there is this one component in which women do better.

Similarly, we found in our studies that women are more self-reflective, they are also more accepting of uncertainty and diversity of perspectives. On the other hand, men tend to be better at emotional regulation and decisiveness. There are some sex differences, I can [inaudible 00:17:59] these are not universal. There are men who are very compassionate and women who are very decisive. So there’s not a one-to-one rule about that. However, by and large, you do see these differences. These are very likely biologically based, but we don't know yet about the biology to pinpoint the reasons for that.

Bill Glovin: Your article briefly touches on the impact of Covid and aging. What did we learn from the pandemic?

Dilip Jeste: You remember that, when in the beginning, for several months, the main news item was that older people were at a very high risk of developing complications of Covid, more likely to be hospitalized, more likely to need ICU ventilation, more likely to die. And that has been a consistent finding throughout the Covid epidemic all over the world. Then when the social distancing guidelines came into play older people were at a bigger disadvantage because many of them didn't have technology or didn't know how to use technology. Unlike younger people, many older people didn't know how to use FaceTime or Zoom or even
email. The expectation was that older people would go much worse psychologically. They will feel more lonely, more depressed, more anxious. Guess what the results show? And this was many recent studies. There's one paper published just a month ago in one of the JAMA journals.

That showed that adults between the ages of 18 and 25 were five times more likely to have depression, anxiety, and stress than people over the age of 65. Well, that's a huge difference, exactly opposite of what one would have expected. So why did older people do better psychologically, even though they had more physical risk and they didn't know how to use technology? So they actually could have been more isolated. I think it is because of their experience and wisdom and resilience, because number of them said that, well, we have been through crisis, even worse than this. Some people went through Holocaust. Some people went through World War II, Vietnam War, so on and so forth.

Or drought, or recessions, the feeling that “I've been there, I've done that, and I've come out of that.” Whereas for younger people, first major crisis for many of their lives, and they didn't know how to handle it. They have social media. Social media often proved to be more harmful than helpful because they convey the negative messages and made people feel worse than actually they should. So this is an example of how wisdom associated with aging was helpful. Not only for older people themselves, but also they serve as role models for some younger people.

**Bill Glovin:** Another topic you touch on in your article is called; "the Grandmother Hypothesis." Can you tell us what that is and what it tells about aging?

**Dilip Jeste:** I always wondered why people live so wrong because according for Darwin's hypothesis of survival of the fittest, animals after they lose their fertility. And this happens to in the wild type of lions and all other animals that the reason is for a species to survive. We must replace the death ones with new babies. So when you stop producing babies, you're no good. You're not useful to the society of the species survival, right? So in humans, our lifespan has been increasing rapidly. It was only about 45 in 1,908 in the US to the 80, 81, it'll be 90. So has increase but fertility span has on. We still have menopause in women and andropause in men at 45/50 that has been there right from the times immemorial. We are living longer without increasing our ability to produce children in later life.

So how does nature allow them? What is the grandmother hypothesis? It says that when grandparents, especially grandma is involved in helping her adult daughter, the adult daughter lives longer, is happier and is more fertile than her mom was. And this has been shown in bottlenose dolphins, in some species of birds and in humans. And these are papers published in nature and science. So this is not some feel good TV science, it's real hardcore science. Studies have shown that when grandparents are involved...
in raising children, it helps a younger generation that don't only live longer but they're more fertile. So that's really remarkable findings. So that's the grandmother hypothesis. But there's another side to that, which is going beyond fertility. Grandparents are very helpful for the younger generation because they transmit cultural values, they transmit wisdom that comes with experience. The younger people who don't have that experience.

Another thing to consider is really something unique about humans. We start producing babies, right? 12, 13, 14. Our brain has not grown fully then. Our brain continues to grow until early to mid twenties. There is synaptic pruning that occurs during adolescence. For example, humans can produce babies even when their brain is not developed. They can't take care of themselves, how can they take care of the babies? We need grandparents for that? I believe that grandparents are necessary from the evolutionary perspective, not only for increasing fertility of the younger generation, but also for transferring wisdom in that younger group.

Bill Glovin: You touched on this before. And I think it might tie in a little bit to the grandmother hypothesis. I find it fascinating that culture has a lot to do with how people perceive aging. And that of course, where your ancestral home in India was a whole different kind of mindset than it is here in Western society. Why do you think that has occurred? And is there anything we can do in Western society to kind of change that thinking?

Dilip Jeste: To answer the second question, I think we need to promote intergenerational activities, absolutely critical to do that, and definitely benefit both the generation older and younger. Coming to the first question, cultural influences are important because those are the traditions but then the traditions do change and they should change. However, some basic traditions don't change, emotional regulation, compassion, self-reflection. Accepting uncertainty and diversity of perspectives decisive in it. Those are universal qualities and they have been there from the beginning of the humanity and they will continue to be there in the future because humans, we are a social group. We are a social species. Actually the word homo sapiens means wise man. For our species survival, we must have social engagement, social support. And that is where wisdom comes into play. And that is something that often increases with experience. And that's why older age is necessity in a way for some people to be wiser.

Bill Glovin: But not least you mentioned "a beautiful mind before," but I'm wondering if there's anything else in the way of books or films or anything in the culture that you might recommend for listeners who are especially interested in this topic.

Dilip Jeste: There's another person like John Nash. Some people may have heard, her name is Elyn Saks, S-A-K-S. She is a distinguished Professor of law and psychiatry at the University of Southern California. Brilliant person has, written multiple books and so on. She was diagnosed with schizophrenia when she was an
undergraduate at Yale. And again, just like Nash spent a number of years in and out hospital in restraints, getting ECT, insulin coma and what have you. And yet, she's doing very well. She still has symptoms. She wrote another autobiography called; "the center cannot hold," and I will strongly recommend that please read that book. It's a great example of someone who fought serious mental illness, continues to fight it. And yet in her later middle age, she's very active. And again, that's an example of increasing wisdom with age in spite of serious mental illness.

Bill Glovin: Well, I think that's a great place to end and I want to thank again, our guest, Dilip Jeste, co-author of our *Cerebrum* cover story; "Ageism: The Brain Strikes Back," which you can find at Dana.org. This has been a great discussion and I can't thank you enough for being a guest on our podcast and for writing such a captivating article.

Dilip Jeste: Thank you, Bill. This was my privilege to be writing the article and to be on your podcast. I appreciate that.

Bill Glovin: Thanks to all our listeners and wishing you a great day and we'll see you next time.